control of the heater and the vent is mutually exclusive. When the system is heating, the vent is open to control the pressure within the system.

[1042] Referring now also to FIG. **136**, in various embodiments, the system includes a product controller. The desired product water level **10584** is fed into the product level controller **10586**. The output is the product valve duty cycle **10588**. The product valve duty cycle **10588** is then fed into the valve electronics **10590**. The fluid flows to the desired level (determined using the product level sensor assembly **10592**)

[1043] Referring now also to FIGS. **137-140** in various embodiments, the system, and in some embodiments, there may be multiple systems/devices **10594** included in a network (this disclosure is not limited to single or multiple devices, rather, this method/system/network may be used with at least one system/device), communicates **10596** by way of a cell phone network, Wi-Fi, Ethernet, Modem, 4G, Iridium Satellite Modem or other satellite model, and/or any other mechanism to connect to the internet, for example, with at least one external manager **10600** through a cloud **10598**. However, in some embodiments, a single system/device **10602** may communicate **10604**, for example, using a USB-based communications link/connection, with one external manager **10606**. The at least one external managers **10600** may connect to the cloud **10598** using any communication mechanism, including, but not limited to, web pages, web-based API and/or SQL. In various embodiments, the at least one external manager **10600** may include server pages, analytic devices and or WaterView. In various embodiments, the cloud **10598** may include at least one database and at least one cloud server.

[1044] As the data in the system/device (whether a single system **10602** or multiple systems/devices **10594** on a network) changes, the data is written to a persistent file or log. In embodiments where the device/systems are communicating through the internet, at a pre-determined time, for example, at 11:59 p.m., or at pre-determined/pre-programmed intervals, the communications **10596** connect to the internet and the system connects to the cloud **10598**. The data is uploaded/moved to the cloud. The one or more external managers **10600** may download the data to a server and/or a computer device, and the data is therefore backed up both by the cloud **10598** and the one or more external managers **10600**.

[1045] Each time the data is updated, the most up-to-date data and/or state is uploaded into the live/most recent state and the old state is moved to a history. At the end of an interval, for example, 24 hours, of device/system run, the at least one external manager **10600** may review the data and determine if changes are needed, etc. In various embodiments, only changes in state/data are logged. However, in some embodiments, for sensors, valves, etc., that may be constantly changing; the system may log the data at a pre-determined/pre-programmed interval, e.g., every 5 minutes. Logging only the changes or logging data in intervals may be beneficial for many reasons, including, but not limited to, transferring and/or logging less data overall which is more efficient.

[1046] In various embodiments, the at least one external manager, either **10606** or **10600**, may set the state for the systems/devices.

[1047] In various embodiments, for example, the embodiment shown in FIG. **137**, the at least one systems/devices **10594** may connect/communicate **10596** with the cloud **10598** at pre-programmed intervals, e.g., every 2 hours. This is beneficial for many reasons, including, but not limited to, the systems/devices **10594** at all times which may decrease the opportunity for hacking into the systems/devices **10594**, and/or compromising the systems/devices **10594**. If one or more of the at least one external managers **10600** desires to connect to one or more systems/device **10594** at a given time that is outside when the at least one systems/device **10594** are connected to the cloud **10598**, the at least one external manager **10600** may shoulder tap the cloud **10598** and communicate to the cloud **10598** that the at least one external manager **10600** wants to communicate with one or more systems/devices **10594**. The cloud **10598** may send a text message to the at least one or more systems/device **10594** that tells the at least one or more systems/devices **10594** to connect to the cloud **10598**. This configuration may be beneficial for many reasons, including, but not limited to, conserving bandwidth as the at least one external managers **10600** do not have of stay connected to the cloud **10598** or the at least one systems/devices **10594** all the time, rather, only when it is necessary.

[1048] This network communications configuration may be used for remotely controlling and/or remotely monitoring the one or more systems/devices **10594**. Additionally, This network communications configuration may be used for downloading, remotely, software updates and/or reconfiguring one or more systems/devices **10594**.

[1049] In addition, the following is incorporated herein by reference in its entirety: U.S. patent application Ser. No. 10/713,617 filed Nov. 13, 2003, Publication No. US-2005-0016828 published Jan. 27, 2005, now U.S. Pat. No. 7,597,784 issued Oct. 6, 2009 and entitled Pressurized Vapor Cycle Liquid Distillation (Attorney Docket No. D91).

[1050] While the principles of the invention have been described herein, it is to be understood by those skilled in the art that this description is made only by way of example and not as a limitation as to the scope of the invention. Other embodiments are contemplated within the scope of the present invention in addition to the exemplary embodiments shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention.

What is claimed is:

1. A method for determining the quality of product water output comprising:

providing a controller;

providing a first conductivity sensor in communication with the controller;

providing a first product valve downstream from the first conductivity sensor and in communication with the controller;

providing a second product valve downstream from the first product valve and in communication with the controller;

providing a second conductivity sensor downstream from the second product valve and in communication with the controller;

providing a divert valve downstream from the first conductivity sensor and upstream from the first product valve and in communication with the controller;

the controller comparing the conductivity from the first conductivity sensor and the second conductivity sensor; and